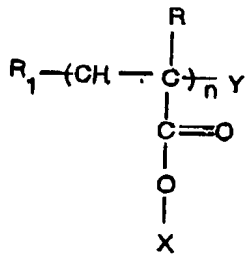
363/NF/02

Claims:

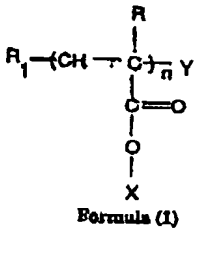
1. Functional polyvalent oligomer having formula (1)'



Formula (1)

wherein R is H , CH_3, C_2H_5, R1, is H, NH2, OH, COOH, X is *N-Acetyl* Glucosamine, mannose, galactose and sialic acid, fructose, ribulose, erythrolose, xylulose, psicose, sorbose, tagatose, glucopyranose, fructofuranose, deoxyribose, galactosamine, sucrose, lactose, isomaltose, maltose, cellobiose, cellulose and amylose, Y is H, COOH, OH or NH2., and n is from 3 to 50

2. A process for the preparation of the functional polyvalent oligomer of the Formula (1)



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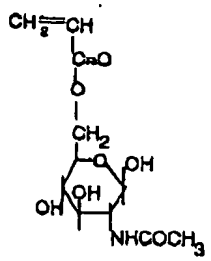
3. A process as claimed in claim 2, wherein the monomer used is NAG, is Acryloyl NAG or Methacryloyl NAG.

4. A process as claimed in claim 3 wherein said monomer is Acryloyl NAG having the Formula 2



Formula (2)

5. A process as claimed in claim 4, wherein said chain tranfer agent is a mercapto ethanol having the Formula 3:

$$HSCH_2CH_2OH$$

Formula 3

6. A process as claimed in claim 2 wherein the solvent used to dissolve the monomeric ligand is selected from water, methanol, ethanol, dimethyl formamide, tetra hydro furon or dimethyl sulfoxide.

7. A process as claimed in claim 2, wherein the chain transfer agent is selected from Mercapto Ethanol, Mercapto Propionic Acid, Mercapto Amine, Mercapto Propanol

8. A process as claimed in claim 2, wherein said initiator is selected from ammonium per sulphate(APS), potassium per sulphate(KPS), or azo bis iso butyro nitrile(AffiN), 4,4 azobis (4-cyanopentanol), 4,4 azobis (4-cyanovaleric acid),or 3,3 azobis (3-cyanovaleric acid).

9. A process as claimed in claim 2, wherein said accelerator is selecetd from *N,N'*, N" tetramethyl ethylene diamine (TEMED).

10. A process as claimed in claim 2, wherein saidcarbohydrate ligand is selected NAG, sialic acid, mannose or galactose.

11. A process as claimed in claim 2, wherein said non solvent is selected from acetone, diethyl ether or hexane.

12. A process as claimed in claim 2, wherein the molecular weight of said oligomeris in range from 400 Daltons to 4000 Daltons.

13. A process as claimed in claim 2, wherein the molar ratio of chain terminating agent to monomer NAG for the synthesis of functional polymer is in the range of from 0.5:25 to 1: 0.5, preferably 1 to 25 to 1: 20.